AMENDMENTS TO THE CLAIMS

Please cancel claims 30-32, 53-55, and 92 without acquiescence to the basis of the Restriction Requirement, and without prejudice to pursue these claims and previously presented claims in related application(s), as follow:

1.   (Previously Presented) A method for generating one or more images, comprising:

collecting data samples representative of a breathing motion of an object;

acquiring image data of at least a part of the object over a time interval using radiation;

synchronizing the data samples and the image data to a common time base;

generating one or more images using a processor based on the synchronized image data; and

storing the one or more images.

2.   (Previously Presented) The method of claim 1, wherein the collecting comprises performing a computed tomography procedure or a PET procedure.

3.   (Original) The method of claim 1, wherein the time interval comprises at least one physiological cyclic interval.

4.   (Original) The method of claim 3, wherein the at least one physiological cyclic interval comprises one interval within a physiological breathing cycle.

5.   (Original) The method of claim 1, wherein the generating comprises constructing a volumetric image.

6.   (Original) The method of claim 1, wherein the generating comprises constructing a plurality of volumetric images.

7.   (Original) The method of claim 6, wherein the plurality of volumetric images are displayed in sequence to form a video.

8.   (Original) The method of claim 1, wherein the generating the one or more images is performed retrospectively.

9.   (Original) The method of claim 1, further comprising identifying an interval of interest, wherein the generating the one or more images comprises constructing an image using image data associated with the interval of interest.

10.   (Previously Presented) The method of claim 1, wherein the generating comprises using image data that are associated with a phase of the breathing motion to generate an image.

11.   (Previously Presented) The method of claim 1, wherein the generating comprises using image data that are associated with a first phase of the breathing motion to generate a first image,

and using image data that are associated with a second phase of the breathing motion to generate a second image.

12. (Original) The method of claim 11, further comprising displaying the first and the second images in a sequence to form a video.

13. (Original) The method of claim 1, wherein the object comprises at least a portion of a patient.

14. (Original) The method of claim 1, wherein the object comprises at least a portion of a structure that is undergoing stress testing.

15. (Previously Presented) A system for generating one or more images, comprising:

    means for collecting data samples representative of a breathing motion of an object;

    means for acquiring image data of at least a part of the object over a time interval using radiation;

    means for synchronizing the data samples and the image data to a common time base; and

    means for generating one or more images based on the synchronized image data.

16. (Original) The system of claim 15, wherein the means for generating is configured to construct an image using image data associated with an interval of interest.

17.   (Previously Presented) The system of claim 15, wherein the means for generating is

configured to generate an image using image data that are associated with a phase of the

breathing motion.

18.   (Previously Presented) The system of claim 15, wherein the means for generating is

configured to generate a first image using image data that are associated with a first phase of the

breathing motion, and a second image using image data that are associated with a second phase

of the breathing motion.

19.   (Original) The system of claim 18, further comprising means for displaying the first and

the second images in a sequence to form a video.

20.   (Original) The system of claim 15, wherein the means for collecting comprises an optical

device and a marker block.

21.   (Previously Presented) The system of claim 15, wherein the means for acquiring is

selected from the group consisting of a CT machine and a PET machine.

22.   (Original) The system of claim 15, wherein the means for synchronizing and the means

for generating comprises a processor.

23. (Previously Presented) A computer product having a set of stored instruction, the execution of which causes a process to be performed, the process comprising:

collecting data samples representative of a breathing motion of an object;

acquiring image data of at least a part of the object over a time interval using radiation;

synchronizing the data samples and the image data to a common time base;

generating one or more images based on the synchronized image data; and

storing the one or more images.

24. (Original) The computer product of claim 23, wherein the generating comprises constructing a volumetric image.

25. (Original) The computer product of claim 23, wherein the generating comprises constructing a plurality of volumetric images.

26. (Original) The computer product of claim 25, wherein the plurality of volumetric images are displayed in sequence to form a video.

27. (Previously Presented) The computer product of claim 23, wherein the generating comprises using image data that are associated with a phase of the breathing motion to generate an image.

28.   (Previously Presented) The computer product of claim 23, wherein the generating

comprises using image data that are associated with a first phase of the breathing motion to

generate a first image, and using image data that are associated with a second phase of the

breathing motion to generate a second image.

29.   (Original) The computer product of claim 28, further comprising displaying the first and

the second images in a sequence to form a video.

30-49. (Canceled)

50.   (Previously Presented) The method of claim 1, wherein the collecting comprises using an

optical device.

51.   (Previously Presented) The method of claim 50, wherein the optical device comprises a

camera.

52.   (Previously Presented) The method of claim 50, wherein the optical device comprises a

fluoroscope.

53-55. (Canceled)

56.   (Previously Presented) A method for processing image data, comprising:

acquiring image data of at least a part of an object;

calculating an image phase value;

assigning the image phase value for the image data using a processor to thereby bin the image data; and

storing the binned image data.

57-60. (Canceled)

61.   (Previously Presented) The method of claim 56, wherein the acquiring comprises performing a computed tomography procedure.

62.   (Previously Presented) The method of claim 56, wherein the acquiring comprises performing an MRI procedure.

63.   (Previously Presented) The method of claim 56, wherein the acquiring comprises performing a PET procedure.

64-65. (Canceled)

66.   (Previously Presented) The method of claim 56, further comprising generating an image using at least a portion of the binned image data.

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67.   (Previously Presented) The method of claim 66, wherein the generated image comprises a volumetric image.

68-74. (Canceled)

75.   (Previously Presented) A method for collecting image data, comprising:

acquiring image data of at least a part of an object over a time interval;

sorting the image data using a processor based on a portion of a cycle of a breathing motion of the object at which the image data are acquired; and

storing the sorted image data.

76-80. (Canceled)

81.   (Previously Presented) The method of claim 56, wherein the image data is binned so that the image data correspond with a phase of a breathing motion, and wherein the method further comprises generating an image using the binned image data.

82.   (Previously Presented) The method of claim 75, wherein the image data is sorted so that the image data correspond with one or more phases of the breathing motion, and wherein the method further comprises generating an image using the sorted image data.

83.   (Previously Presented) The method of claim 1, wherein the act of synchronizing results in the image data being associated with one or more phases of the breathing motion.

84.   (Previously Presented) The system of claim 15, wherein the means for synchronizing the data samples and the image data causes the image data to be associated with one or more phases of the breathing motion.

85.   (Previously Presented) The computer product of claim 23, wherein the act of synchronizing results in the image data being associated with one or more phases of the breathing motion.

86.   (Previously Presented) The method of claim 1, wherein the data samples comprise a plurality of positional points representing respective positions of the object as it undergoes the breathing motion.

87.   (Previously Presented) The method of claim 1, wherein the object is a part of a patient, and the breathing motion of the object is controlled by the patient.

88.   (Previously Presented) The system of claim 15, wherein the data samples comprise a plurality of positional points representing respective positions of the object as it undergoes the breathing motion.

89. (Previously Presented) The system of claim 15, wherein the object is a part of a patient, and the breathing motion of the object is controlled by the patient.

90. (Previously Presented) The computer product of claim 23, wherein the data samples comprise a plurality of positional points representing respective positions of the object as it undergoes the breathing motion.

91. (Previously Presented) The computer product of claim 23, wherein the object is a part of a patient, and the breathing motion of the object is controlled by the patient.

92. (Canceled)

93. (Previously Presented) The method of claim 56, wherein the image data corresponds with a phase value of a breathing cycle, and the image phase value is calculated using the phase value of the breathing cycle.

94. (Previously Presented) The method of claim 56, further comprising:

acquiring additional image data, wherein the image data and the additional image data are acquired at different times;

calculating an additional image phase value; and

assigning the additional image phase value for the additional image data;

wherein the image phase value is equal to the additional image phase value, thereby

resulting in the image data and the additional image data being binned together in a same group.

95.   (Previously Presented) The method of claim 56, further comprising:

acquiring additional image data, wherein the image data and the additional image data are

acquired at different times;

calculating an additional image phase value; and

assigning the additional image phase value for the additional image data;

wherein the image phase value is different from the additional image phase value,

thereby resulting in the image data and the additional image data being binned in different

respective first and second groups.

96.   (Previously Presented) The method of claim 95, further comprising:

using the image data binned in the first group to generate a first volumetric image; and

using the additional image data binned in the second group to generate a second

volumetric image.

97.   (Previously Presented) The method of claim 96, further comprising displaying the first

and second volumetric images in a sequence to form a video.

98.   (Previously Presented) The method of claim 75, wherein the image data are sorted so that

a first subset of the image data corresponding to a first respiratory phase or a first respiratory

phase range are grouped together in a first set, and a second subset of the image data

corresponding to a second respiratory phase or a second respiratory phase range are grouped

together in a second set.

99.   (Previously Presented) The method of claim 98, wherein data in the first subset of the

image data are obtained at different times.

100.   (Previously Presented) The method of claim 75, wherein the image data are sorted by:

calculating different image phase values; and

assigning the different phase values to different respective subsets of data in the image

data.

101.   (Previously Presented) A system for processing image data, comprising:

a processor configured for

receiving image data of at least a part of an object;

associating the image data with a first phase value;

determining whether the first phase value is within a prescribed phase range;

constructing an image using the image data if the first phase value is within the

prescribed phase range;

102.   (Previously Presented) The system of claim 101, wherein the processor is further

configured for:

receiving additional image data;

associating the additional image data with a second phase value; and

determining whether the second phase value is within the prescribed phase range;

wherein the processor is configured to construct the image also using the additional

image data if the second phase value is within the prescribed phase range.

103.   (Previously Presented) A system for processing image data, comprising:

a processor configured for

acquiring image data of at least a part of an object,

calculating an image phase value, and

assigning the image phase value for the image data using a processor to thereby

bin the image data.

104.   (Previously Presented) The system of claim 103, wherein the image data corresponds

with a phase value of a breathing cycle, and the processor is configured to calculate the image

phase value using the phase value of the breathing cycle.

105.   (Previously Presented) The system of claim 103, wherein the processor is further

configured for

acquiring additional image data, wherein the image data and the additional image data are

acquired at different times,

calculating an additional image phase value, and

assigning the additional image phase value for the additional image data;

wherein the image phase value is equal to the additional image phase value, thereby

resulting the image data and the additional image data being binned together in a same group.

106.   (Previously Presented) The system of claim 103, wherein the processor is further

configure for

   acquiring additional image data, wherein the image data and the additional image data are

acquired at different times,

   calculating an additional image phase value, and

   assigning the additional image phase value for the additional image data,

   wherein the image phase value is different from the additional image phase value,

thereby resulting the image data and the additional image data being binned in different

respective first and second groups.

107.   (Previously Presented) The system of claim 106, wherein the processor is further

configured for

   generating a first volumetric image using the image data binned in the first group; and

   generating a second volumetric image using the additional image data binned in the

second group.

108. (Previously Presented) The system of claim 107, wherein the processor is further configured to cause the first and second volumetric images to be displayed in a screen in a sequence to form a video.

109. (Previously Presented) A system for processing image data, comprising:

a processor configured for

receiving image data of at least a part of an object, and

sorting the image data based on a portion of a cycle of a breathing motion of the object at which the image data are acquired.

110. (Previously Presented) The system of claim 109, wherein the processor is configured to sort the image data so that a first subset of the image data corresponding to a first respiratory phase or a first respiratory phase range are grouped together in a first set, and a second subset of the image data corresponding to a second respiratory phase or a second respiratory phase range are grouped together in a second set.

111. (Previously Presented) The system of claim 110, wherein data in the first subset of the image data are generated using radiation at different times.

112. (Previously Presented) The system of claim 109, wherein the processor is configured to sort the image data by:

calculating different image phase values; and

assigning the different phase values to different respective subsets of data in the image

data.